Gonzales, Birthplace of Texas Freedom — *By E. M. Schiwetz*

The HUMBLE WAY

SEPTEMBER-OCTOBER, 1950

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VOL. VI No. 3

Oil for Security

The present emergency has raised the question, "How could the oil industry perform in the event of another all-out war?" This interview with President Hines H. Baker brings out some interesting and authoritative statements on a subject of nation-wide importance.

MR. BAKER, the one question about the oil industry that is uppermost in people's minds is this: In the event of another global war, could the oil industry perform as well as it did in World War II?

MR. BAKER: In such an unfortunate event, the oil industry is ready to deliver more than in World War II. The U. S. oil industry is now supplying daily a million barrels more than at the peak of World War II. If necessary, it can supply still more.

Q. *That is most reassuring. Just how much oil does the industry produce and refine today?*

A. From domestic sources alone, we are now supplying about 6,400,000 barrels daily of petroleum products. That is 65 per cent more than our domestic production ten years ago.

Q. *That is a lot of oil. Surely the industry must be hard pressed to discover oil as fast as it is used.*

A. We have not let up a minute in our search for new oil. Our exploration efforts are unrelenting, and many new reservoirs have been discovered since the end of World War II. Some of them are of outstanding importance, such as the fields in Scurry County, Texas. Not only have we found new fields, but we have worked continuously on methods and ways of getting more oil out of known reservoirs.

Through constant research, the oil industry has discovered ways of making new products, and methods of making old products better.

Above all, I think it is to the credit of the oil industry that it has plowed a large part of its resources back into the business. That means more and better products for American consumers; more oil when it is needed in time of peace or war. In the last five years, refining capacity, production, and proved oil reserves in the United States have increased about 25 per cent. That didn't just happen; it is the result of hard work and the investment of some eight billion dollars under free and highly competitive conditions.

Q. *That explains why, in World War II, there was no lack of petroleum for our armed forces. By the way, Mr. Baker, just why does it take so much in wartime?*

A. During World War II, a single armored division needed about 60,000 gallons

"We have not let up a minute in our search for new oil"; a field geologist seeks clues to oil-bearing formations from outcrops along the bank of a creek

of gasoline *every day!* The fuel tanks of a single battleship hold enough oil to heat your home more than 500 years.

The fuel tanks of one B-36 bomber hold 25,000 gallons of gasoline—enough to drive a passenger car around the world 15 times.

It took about seven billion barrels of Allied oil to fight World War II, and six billion barrels of that came from the United States.

Q. *No wonder it takes so much oil to fight a global war! The figures are staggering. If the military forces require more oil in case of another global war than in World War II, could the industry still supply enough in the face of increased domestic uses?*

A. I am confident that it could, but make no mistake about it; the job would *not* be an easy one. Meeting the demands of an all-out war always brings difficult problems—operating problems of all kinds, material shortages (some of which are already making themselves felt), and problems of maintaining an adequate working force.

We would have to drill wells at a rate that would keep up with the increased volume of oil being used. Certainly, we would have to make additions to our refining equipment, though perhaps not on as large a scale as was necessary in World War II.

In summary, the job would be big and the problems many. In general, however, I am confident that we could meet those problems and solve them, just as we have done in the past.

Q. *Mr. Baker, isn't it a fact that a number of new products were developed and produced in large quantities from petroleum during World War II?*

A. Yes, that is right. Among the most dramatic and most important of these were synthetic rubbers and synthetic toluene for explosives. We learned to make the Butyl type rubber for inner tubes and the Buna-S type rubber for tires. It was well that we did, because you remember that our natural rubber supplies were cut off by the Japanese.

The synthetic toluene that we learned to make is the final "T" in TNT, the explosive for bombs and shells. Three-fourths of all the TNT used in World War II was made with toluene produced synthetically from oil.

Q. *Mr. Baker, it is generally known that Humble had a lot to do with the manufacture of synthetic rubber and toluene. Could you tell us how much?*

A. Yes. Humble built two synthetic rubber plants and a synthetic toluene plant, and operated them for the government. The toluene plant produced half of the Allied supply of that vital material; at one time during the war, we supplied two-thirds of the toluene made from oil. About one-sixth of the synthetic rubber made from oil came from Baytown plants built and manned by Humble people.

Q. *Were the synthetic rubber plants operated by Humble closed at the end of the war?*

A. No, they were not. They have remained in operation continuously, and are now running at full capacity. We are not only making more rubber there, but are making a better rubber than we did during the war.

Q. *And what about the plant where Humble made so much toluene? Was it closed down after the war?*

A. No, it was not closed down; it is now used to make other products. Some toluene is still produced at the plant, but it goes into solvents, rather than explosives. However, if need be, we can begin concentrating on toluene again on very short notice, using the same plant.

Q. *That is very good news, indeed. Now, Mr. Baker, here is a question which I am sure has already occurred to every citizen: "What will happen to my gasoline and heating oil supplies in case of another World War?"*

A. Undoubtedly, the amount available for civilian use would be greatly reduced. The extent of the reduction would depend upon the gravity and scope of the conflict. I think I can assure you, however, after military and essential industrial demands were met, that there would be enough gasoline and heating oil to meet *essential* civilian needs.

Q. *Do the requirements of the armed forces represent all of the war demands of the petroleum industry?*

A. By no means. Oil is the key to our transportation system. It keeps railroads and trucks at their vital task of moving peak loads of men and materials; it takes war workers to and from their jobs.

Oil keeps the great American arsenal running at top speed, making every weapon of war. In wartime, we are busily engaged in producing special lubricants, cutting oils, and other products for factories and shops.

Oil keeps farm machines at their important job of producing food. Oil fights at home as well as abroad.

Q. *Mr. Baker, how long would you say it would take the oil industry to convert to a full wartime basis?*

A. I doubt that "convert" is quite the proper word in this case. Unlike some industries, we don't have to switch over and make an *entirely* new product. Of course, it would mean reshaping of the oil industry's operations, if full-scale war should come, and substantial revisions in the use of equipment. We should most certainly need additional equipment. For example, not all the facilities added to refineries during the last war are currently available for production of war materials. Fortunately, many of the improvements and additions at refineries have remained steadily in use; we have kept them going; they would serve the nation well. But an all-out war would certainly call for considerable new construction.

In the main, however, I think the industry could make the necessary adjustments within a reasonable time. We have already made some of them, adjusting to the situation in Korea. Our production of aviation gasoline, synthetic rubber, and other vital products has increased sharply.

Q. *What about manpower problems in case of total war?*

A. Our industry, like others, would lose a substantial number of its employees. Of course, many trained technicians are indispensable to the performance of certain duties essential to the production of special war products. To offset the losses in manpower, it would be necessary to do as we did before: close up the ranks, adopt a longer work week, make certain shifts and adjustments in the use of manpower, and train people to take over new jobs. We are already beginning to lose some men as a result of the Korean situation.

Q. *In short, then, Mr. Baker, the industry would be able to make use of some of the lessons it learned in World War II?*

A. Precisely. And I should like to say right here that a great majority of the credit for the oil industry's record of achievement in World War II goes to the oil workers themselves. No job was too big for them, too long, or too hard. They were, in every sense of the term, "soldiers on the home front."

Q. *That is a fine tribute. Now, what about transportation?*

A. There would be transportation problems, but probably not so many nor so serious as we had before. Pipe line systems have grown tremendously in the postwar years. Tanker fleets have grown, and the trend has been toward larger, faster tankers.

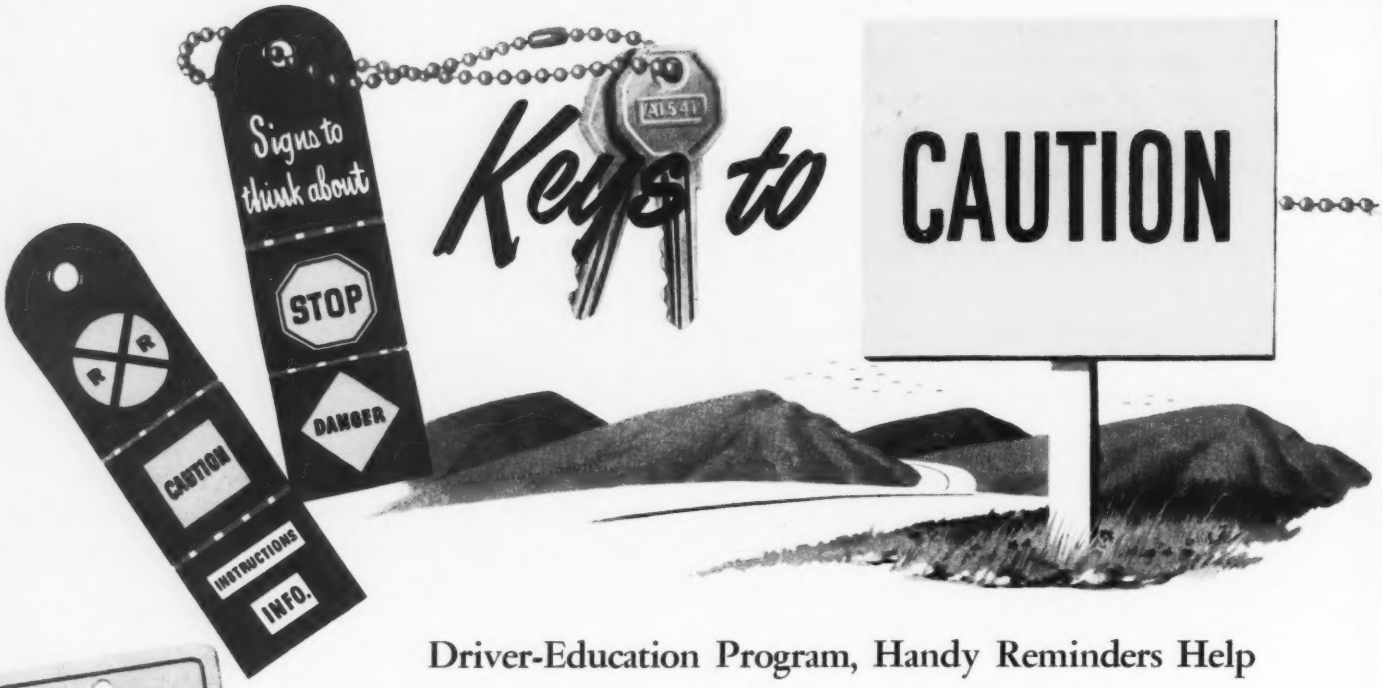
If you recall, we faced serious transportation problems when the enemy submarine campaign was at its height. This time, we would be in a better position, transportation-wise, to meet the need, but we still would need some additions and improvements in all forms of oil-moving facilities.

Q. *Just what is there about the oil industry that makes it perform so capably in peace and war? Can you reveal that secret?*

A. I'd hardly call it a secret. The oil industry, like other American businesses, has been able to meet the demands made of it because it has been allowed to operate under a system of free, vigorous competition. Such a system as ours, which is unique in the world today, encourages the development of an efficient, energetic organization.

Under the American system, our oil industry has found in this country more than half the world's proved oil, even though we have only 15 per cent of the world's rock formations in which oil is likely to be found. It is a system which gives each consumer in the United States an average of more than 600 gallons of oil a year, as compared with about 20 gallons a year per person for the rest of the world.

Ours is a system which serves the public interest in peace and protects it in war. It is a system that must be preserved.



Driver-Education Program, Handy Reminders Help Improve Company Automobile Safety 30 Percent

Thus far in 1950, Humble drivers of Company cars and trucks have achieved an outstanding record: They have reduced automotive accidents by 30 per cent from last year!

This remarkable improvement indicates the real caution-consciousness among Humble drivers—*they take time to take care.*

A large share of the achievement is due to the drivers, supervisors, and safety engineers who every day seek to improve the record through the Company's safety program. The one-third reduction in accidents among the drivers of the Company's 3,200 cars and trucks which roll a total of five million miles each month indicates how the safe-driving attitude has been spread. The safe-driving program is designed to *develop and keep* a real consciousness for careful driving in every driver.

Number one in the program are the six driver-education units operated by the Company. These, including the one mobile unit, have already given training and examinations to more than 4,000 Humble people this year. The elaborate equipment and thoroughness of instruction indicate the serious determination behind the program. (See For Safer Driving, THE HUMBLE WAY for March-April, 1950.)

Everyone who receives the driver training is impressed, for few of us realize just how dangerous an automobile can be. They have found that courteous driving—careful driving—is contagious on the road, for other drivers will follow the lead when given an example.

In the driver-education units a driver can evaluate and refresh his knowledge of traffic laws and safe driving practices in the written examination and review; vision and quickness of reaction can be measured by the tests given. Actually driving a car is the real test of the driver's ability to handle the vehicle. No grades are given, but each driver learns—by sight, hearing, and touch—what safe driving really means, and how he can improve his own. The impressions made in the course are lasting ones which can be easily reminded—and someday they may be life-savers.

In the regular safety meetings held throughout the Company, safe driving practices are reviewed in well-developed programs designed to refresh the drivers' caution. More than 500 meetings are held throughout the company each month, from Florida to California.

In the Sales Department, a vigorous safe-driving program and something extra have helped achieve an outstanding im-

MOTOR VEHICLE ACCIDENTS FOR 1949 (Sales Department)

Backing 19%
Intersection 12%
Following Too Closely Stopping Suddenly—11%
Weather—6%
Equipment Failure—6%
Passing—11%
No Signals—3%
Turning—11%
Speeding—3%
Parking—4%
Road Conditions—2%
Distracted Attention—6%
Miscellaneous—6%

April, 1950, Chart and key tag emphasize vehicle care.

Brightly-colored plastic key tags for '51 Sales Department safe-driving program shown in actual size; general theme is importance of the shape of highway signs.

provement in the accident record.

The major parts of the program are safe-driving contests and a system of awards for safe driving. More than 400 Sales Department drivers hold awards for safe driving, some of which span 19 years or more. One of Humble's champions is Eddie Daley, tankwagon driver at the Houston bulk station, who recently placed second in the competition for Texas' champion truck driver. He missed the championship by taking one too many tries in backing into a parking place!

The extras are the little tags shown on these pages which rattle from the key chains of the Sales Department's 471 cars and trucks. With the consciousness developed by driver training and meetings, the little tags keep that caution awake. By sight and touch the timely tags remind the driver just as he gets behind the wheel. With two senses reminding the driver, the impact is doubled—and the chances are better that the impression will last throughout the trip.

This unique approach to driver safety was developed last year as the 1950 safe-driving program was being prepared. The idea was to remind the driver at the wheel, and since one tag would soon lose its effectiveness, a new tag—and a message—are mailed each month to Sales Department drivers. More than 650 go out each month.

Attached to each tag is a card explaining a particular group of the Department's 1949 accidents, with reminders for preventing similar accidents in the future. Backing (see chart at left, reproduced from card) caused 19 per cent of accidents, and was the subject of the first tag in January.

The June card pointed out that few people actually realize how far it takes to stop. Drivers who take the special driver-training course have an opportunity to see for themselves just how much ground is covered in stopping. The distances are worth studying:

Speed (mph)	Reaction Distance	+	Braking Distance	=	Stopping Distance
20	22		19		41 ft.
30	33		43		76 ft.
40	44		76		120 ft.
50	55		119		174 ft.
60	66		171		237 ft.

The 1951 reminders will continue to point out cautions to reduce accidents. The tags for next year will be brightly colored—to attract the eye and keep that safe-driving consciousness awake—and will center on the importance of highway caution and the shape of highway signs.

Naturally, the goal ahead is to prevent accidents. The program ahead is to keep that safe-driving consciousness awake—so every Humble driver will continue to drive carefully.

Why that Name?

DOLLARHIDE, Diamond M, Tijerina-Canales, Noodle Creek, Possum Corner, Spindletop . . . Which of these would you say are the names of oil fields? They all are, and they were named for better reasons than you may suppose.

The Dollarhide Field, in Andrews County on the New Mexico state line, took its name from a tragedy that some West Texas ranchers would rather forget. Years ago, the story goes, thousands of cattle in that area froze to death during a terrific blizzard. When the ice storm had blown itself out, skinners were permitted to come in and take the hides in return for a fee of one dollar a hide. Hence the name Dollarhide.

The Spindletop Field is famous for the Lucas discovery of oil on a salt dome near Beaumont almost 50 years ago. It is said that the word "Spindletop" first referred to an inverted cone-shaped tree on a bluff near the turning basin on the Neches River east of Beaumont. The term was used by crews on rice and lumber boats.

Surveyor of Houston

Out in Borden County, West Texas, the North Gail and South Gail fields reflect a bit of Texas history and biography. They take the name of the only town in the county. Both the town and the county were named after Gail Borden, Texas patriot, inventor of condensed milk, and surveyor of the townsite of Houston.

Some fields are named for "folks in the family." One independent operator in Texas started naming each new field he discovered for one of his children. That was fine, as far as it went, but he found so many fields that he has run out of names.

Some variation of field names results from their descriptiveness of earth features such as Salt Flat, Round Lake, and Water Valley. The supply seems ample: Gyp Hill, Goat Hill, Flour Bluff, Sulphur Bluff, Cedro Hill, Clabberhill, Riverside, Bead Mountain, Cow Bayou, Honest Ridge.

In certain parts of the oil country, names show the influence of nationalities that predominate in the area. Southwest Texas fields show the Mexican and Spanish effect; in Southern Louisiana, French names are commonly used. In Starr County, Southwest Texas, the Guerra Field takes its name from the family that owns the land. Other fields speak the Spanish language: La Sal Vieja (the old salt), Las Mujeres (the women), Los Indios (the Indians), and Quien Sabe (who knows?). Across the Texas line in Louisiana, the names of oil fields switch from Spanish to French. Here are a few: Cote Blanche (white coast), Bay Marchand (merchant bay), Bayou des Allemands

Curious names of oil fields speak a varied language; they often concern colorful incidents in the history of an area.

(Bayou of the Germans), Bayou de Glaise (glass bayou), and Bayou Sale (salty bayou).

In Texas the use of ranch names and cattle brands is quite common for naming oil fields. Witness these: Flying W, Diamond M, Rocker A, TXL, C-Bar, "JY" and Three Bar.

Naming a Field

Quite obviously some system is needed to take care of naming the new fields that are discovered each year. Each field has to have a name for proration and communication purposes. The system is easy. In Texas, the operator who discovers the field usually has the privilege of naming it. He checks first with the nomenclature committee of the nearest regional geological society, of which there are several in the state. Individuals on the committee help select a name and try to get it accepted for common use as soon as possible by everyone involved in the field.

Most likely the operator and the committee can agree on the name. Members of the group will check the name he suggests to see if it is already being used. If other operators have leases in the area, the committee discusses the naming of the field with them.

After the committee decides on a title for a field, the group sends its recommendation to the Railroad Commission and to other groups that may have use for the new designation.

Up to this point the naming is on a temporary basis. At the Commission's hearing on the field, the operator suggests the name of his choice. Unless someone objects to that name, the examiner accepts it. If more than one name is submitted, the Commission gives the field the name it considers best; or if no name is suggested, the Commission designates one.

The first announcement of the new name given by the Commission appears on the proration schedule when the field's production allowable is assigned.

The reasons for following all these steps in giving a name to each field are fairly obvious. To prorate oil, regulatory bodies set up records on each producing area; oil companies keep production and other types of records on all fields; individuals talk and correspond with one another about the oil areas. A common term for each area speeds communication.

So, while members of the oil industry—individual operators, companies, and regulatory bodies—name oil fields primarily because names are useful and necessary, they unconsciously preserve through a variety of names many of the local oddities and much of the romance and flavor of the past.

Rig 20 is an imposing sight in the Louisiana marshlands; from left are quarter boat, mess boat, drilling barge, power barge.

They Live on the Lake

Motor launches and tug nestle around mess and quarter boats and oil production barge; walkway leads to drilling barge.

Forty-five miles down the Mississippi River from New Orleans by car and 23 miles by fast speed boat into the marshlands, Humble's Rig 20 is drilling in the Lake Washington Field. The rig is an imposing sight in an area populated by oversize mosquitoes and muskrats.

Each of the 26 drilling crewmen and eight cooks and helpers spends four days of each week on the rig, the rest "ashore" at home. Life on the clean, well-appointed quarter boat is pleasant; meals on the mess boat are excellent.

Rig 20's new Diesel-electric power barge provides the most horsepower for hoisting—2,820—of any rig in existence. Coincidentally, exactly 20 years ago Rig 92, the Company's first Diesel-electric barge rig, was drilling the first wells in the Lake Washington Field. Rig 92, also, was the most powerful rig of its time.

On opposite page, Evening tour crew (4 p.m. to midnight) catches a "fish" lost in the hole.

Evening tour crew heads for rig as day crew starts pulling pipe up in derrick.

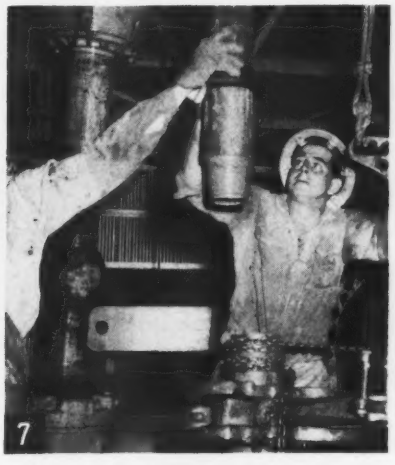
On derrick floor, roughnecks reach for elevators to lift the five-inch drill pipe.

High in derrick, I. A. Naquin looks over water as he unlatches elevators.

Roughnecks Himel and Hebert guide bottom of a 90-foot stand of drill pipe into place. Stand weighs nearly a ton.

Derrickman steadies drill pipe as it is unscrewed on derrick floor; after bottom is set, derrickman will rack upper end.

Caught the fish! Fishing tool expert points where tool joint broke off 9,000 feet down; Tool Pusher Tom Van Ness inspects where the tapered tap screwed into the "fish"—a 7¾-inch underreamer five feet long—in 9⅝-inch diameter hole.



Roughneck Thibodeaux reaches for pipe going back in the hole. Fishing job was a lucky catch on first try.

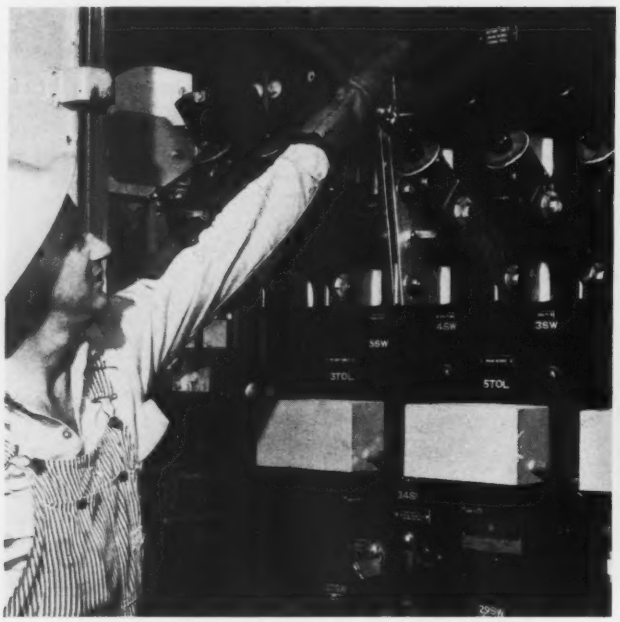
New power barge (foreground at left) supplies plenty of power for heaviest drilling. Amplidyne generators in foreground at right regulate power load from three 1,000 horsepower engines which drive the generators at right. Note cleanliness.

Extra Power on Rig 20 Assures Smooth, Fast Operation

The 2,820 horsepower for hoisting on Rig 20 make it the most powerful rig in operation at this time. Although present drilling depths don't require all the power of only one of the 1,000 horsepower Diesel engines, there is extra power available for fast, smooth operation. Normally, two engine drive generators to supply the rig's power, the other engine-generator set is held in standby.

Powerful Rig 20 is classed as a deep-hole rig, and had just completed a 14,000-foot well before moving to Lake Washington.

Rotary electrical helpers on Rig 20, including R. J. Bruno above, take pride in keeping power barge spotless. Entire crew of Rig 20 is known for their rig's cleanliness, work hard to keep it that way.



Driller Avant pulls one of the master control switches on the rig floor. Switches are for connecting rotary and mud pumps.

Drillers Harrison and Avant check log book; driller's controls can be seen at right from where entire rig can be operated.

GONZALES

Birthplace of Texas Freedom

Gonzales was settled in 1825 by James Kerr, who was seeking a capital for the Green DeWitt Colony. It was named for Don Rafael Gonzales, at that time provisional governor of the Mexican province of Coahuila-Texas.

From the very first, Gonzales had its troubles. In 1826, the year-old settlement was almost destroyed by Indians. Redskins continued to raid the town, and in 1831 the Mexican government loaned the people of Gonzales a small brass cannon for defense.

That cannon was destined to play an important part in Texas history. In 1835, after continual friction between the colonists and the government, demands that the gun be returned touched off the Battle of Gonzales. A more significant engagement than even the colonists themselves realized at the time, it took its place in history as the first battle of the Texas Revolution. Every Gonzalian is familiar with the details of that famous fight for the cannon, and the Texans' stirring challenge to "Come and Take It." A plaque inside the Gonzales Museum bears the names of the 18 men ("the old Eighteen") who held the foe at bay until help could arrive.

Gonzales and its people went on to even greater glory during the Revolution. In March, 1836, when Col. William Barrett Travis issued from the Alamo an urgent appeal for help, 32 men from Gonzales ("The Thirty-Two Immortals") were the only ones to march to the aid of the garrison. It was Gonzales that first received the news of the Alamo's fall, and it was from here, after burning the town, that Sam Houston and his army began the long retreat to San Jacinto.

A stone marks the spot on the Guadalupe River where the first shot of the Texas Revolution was fired on October 2, 1835.

TEXAS HISTORY

Texans, as all the world knows, take fierce pride in the history of their state. It is perhaps true that some, in the heat of their patriotism, have not been disposed to spoil a good story for want of a few facts. But, by and large, those "tall Texas tales" are not so tall as the listener may suppose. In Texas history, there is so much stirring truth that fiction is really unnecessary.

History is not hard to find in Texas. Wherever one goes, there is not far away some fort or shrine, some weathered building, some battlefield or brooding monument where history hangs with an almost visible presence. Such a place brings back memories of the high adventure and courage of a people who cherished freedom above all earthly possessions.

With respect and gratitude for those who have gone before, THE HUMBLE WAY features, from time to time, the people and places that went into the making of the Lone Star State. Written material is authenticated by the Texas State Historical Association. Pencil sketches and watercolor paintings are the work of E. M. Schiwetz, a native Texan for whom the assignment of painting his state's history is a work of love.

The Sam Houston Oak, also called the Runaway Speech Oak, stands 12 miles southeast of Gonzales, on State Highway 200. Beneath its spreading branches Sam Houston in 1836 advised the colonists to flee before Santa Anna's advancing army. Houston set up his headquarters for a time here after burning the town of Gonzales, and here his small army was joined by volunteers who went with him to San Jacinto.

At the left is the remains of an old stagecoach inn.

The Eggleston House is the oldest structure in Gonzales and one of the oldest in Texas. The heavy timbers of its main rooms, sawed and cleverly fitted together, have aged to a flinty hardness.

Eggleston built his house around 1840. (Gonzales was burned in 1836 to keep it from falling into the hands of Santa Anna, and the colonists returned in 1837 to rebuild the town.) A merchant and well-to-do citizen, Eggleston allowed his house to be used for a time as a hotel for the convenience of travelers.

Only the main rooms and hall of the original house remain.

Store-fronts of Gonzales, facing on the main *plaza,* or town square, present a delightful mixture of the old and the new. Outwardly reflecting the architectural charm of an earlier time, most stores are completely modern and air-conditioned inside.

Early Texas towns under Spanish influence were usually built around a single plaza. Gonzales has two. In the center of the main plaza is a monument to the town's Confederate dead. In the other stands a memorial to heroes of the Texas Revolution.

The Gonzales County courthouse (front cover) sits to one side between the two plazas.

Gonzales Today

Today, 115 years after the famous battle, Gonzalians live peacefully and more prosperously than their historic forebears. Theirs is a quietly beautiful town—a town that wears its mantle of history with grace and dignity. There is none of the frenzied haste and snarled traffic of larger cities, yet there are important overtones of purposeful activity.

Gonzales today is the hub of an extensive poultry-and-livestock area. There is industry, too—a cotton mill, cottonseed-oil mill, poultry-dressing and feed-mixing plants, hatcheries, and others. Upstream from the town, the waters of the Guadalupe River have been harnessed for electric power production at a series of dams.

In recent years, Gonzales has distinguished itself for humanitarian, as well as industrial and agricultural, activities. It is headquarters for the Gonzales Warm Springs Foundation for Crippled Children, where youngsters twisted with infantile paralysis are healed and nursed back to happy and useful lives. The Foundation's hospital and the warm springs are at Ottine, 10 miles away.

Though the town continues to grow and new buildings take their places beside the old, most Gonzalians will always regard their hometown as a charming place of memories and monuments. They will be forever stirred by tales of "the old Eighteen" and "The Thirty-Two Immortals" whose valor made Gonzales the birthplace of Texas freedom.

Burnett H. Johnson and Samuel J. Bame, Humble Fellows at The Rice Institute

HUMBLE FELLOWSHIPS

in Science and Engineering

In February, 1947, the Company's Board of Directors approved a recommendation that 12 Humble Fellowships be awarded at six American colleges and universities—three schools in Texas and three out of state. The purpose of awarding the fellowships was to help advance higher levels of scientific learning. The awards were set up on a year-to-year basis, to run a minimum of five years.

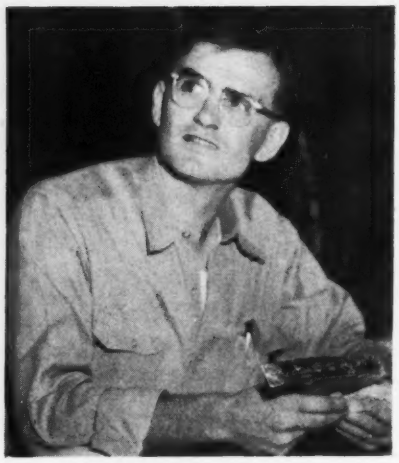
At first, the value of each fellowship was $1,250 for a school year, with an additional $500 to the geology fellows for summer field work. This year, an additional $300 has been granted to cover the cost of tuition, fees, equipment, and supplies.

Humble takes no part in choosing the students. Participating schools make their own selections from among students working on Master's and Doctor's degrees. There is no obligation on the part of the student in accepting a fellowship, nor is there any obligation on the part of Humble in making it available. The student is not required to study a specific subject, except that it should be in the general field in which the fellowship is granted. All details concerning the fellowships are handled between the school and the student.

The 12 Humble Fellowships are distributed as follows: One each in geology, chemical engineering, and chemistry at The University of Texas; one each in civil engineering and mechanical engineering at The Agricultural and Mechanical College of Texas; one each in chemistry and physics at The Rice Institute; one in chemical engineering at The Massachusetts Institute of Technology; one each in geology and petroleum engineering at The University of Oklahoma; and one each in geology and petroleum engineering at Louisiana State University.

Before the 1950-51 school year began, 33 graduate students had studied under Humble Fellowships and 12 more awards have been made for the current year. THE HUMBLE WAY appreciates the cooperation of participating schools in furnishing photographs and information on the 1950-51 Humble Fellows.

Gayle D. Edwards



John P. Brand

Ju-nam Chew

The University of Texas

Chemistry: **Gayle D. Edwards,** 23, was born in Louisiana but makes his home in Austin. He received his Master's degree from The University of Texas in 1948. He holds membership in the American Chemical Society and in several honorary scholastic and chemical societies. He has taught chemistry at The University of Texas and has worked in that school's Texas Cotton Research Laboratory.

Chemical Engineering: **Ju-nam Chew,** 26, was born in China and makes his home in El Paso. He holds Master of Science degrees from both The University of Texas and The University of Michigan. He is a member of honorary engineering, chemical, and chemical engineering societies, and has had several years of experience as a teacher and research assistant at The University of Texas.

Geology: **John P. Brand,** 32, of Roseville, Ohio, received his Master's degree from Miami (Ohio) University in 1947. He is a member of Sigma Gamma Epsilon, national honorary geology fraternity, and was president of his student chapter at Miami. He has had considerable teaching experience in geology at Miami University and Texas Technological College.

The Rice Institute

(see page 15)

Chemistry: **Burnett H. Johnson,** 27, of Huntsville, expects to receive his doctorate in June, 1951. He was graduated from Sam Houston State Teachers College and from the Columbia University Mid-Shipmen School in New York. He entered Rice in 1947 and held a Rice Institute Fellowship until the present school year. He is studying low temperature calorimetry of heat capacities of hydrocarbons.

Physics: **Samuel J. Bame, Jr.,** 26, Salisbury, North Carolina, was graduated from The University of North Carolina in 1947 and was a member of the Phi Beta Kappa chapter at that university. He entered Rice in 1947 and for two years held Rice Institute Fellowships. He was awarded the Humble fellowship in physics last year and again this year. He expects to receive his doctorate in June, 1951. Bame, who has been studying nuclear fission problems, was this year designated co-winner of the H. A. Wilson award in physics for excellence in research.

Vincent E. Kurtz

Clarke P. Gillespie

The University of Oklahoma

Geology: **Vincent E. Kurtz,** 24, of Minneapolis, received his Master's degree in geology at the University of Minnesota in 1949. He also studied at Montana State University and Dartmouth College. He has done extensive field geology work in the Missouri Ozarks, where he specialized in the stratigraphy and paleontology of the Elvins Group. A musician as well as a scientist, he has been active in college and university bands wherever he attended school.

Petroleum Engineering: **Clarke P. Gillespie,** of Fort Worth, was graduated from the University of Oklahoma last summer and is now working toward the degree of Master of Science in Petroleum Engineering. A member of honorary petroleum engineering and military organizations, Gillespie is doing research on a project in reservoir engineering.

Warren E. Stewart

W. F. Bohlmann, Jr.

Charles P. Howard

Massachusetts Institute of Technology

Chemical Engineering: **Warren E. Stewart,** 26, of Whitewater, Wisconsin, received his Master's degree from the University of Wisconsin in 1947. He entered M.I.T. that same year and is now working for his doctor's degree in chemical engineering. He is a member of several honorary scientific societies, and the American Institute of Chemical Engineers (student chapter). His thesis for the Doctor's degree is "Interaction of Heat, Mass and Momentum Transfer."

The A. & M. College of Texas

Civil Engineering: **W. F. Bohlmann, Jr.,** 23, of Schulenburg, was Cadet Colonel at A. & M. last year, and has returned to work on his Master's degree. As an undergraduate, he was a member of the Ross Volunteers, a Distinguished Military Student, a Distinguished Student (scholastically), a member of the Engineer Student Council, and president of the A. & M. chapter, American Society of Civil Engineers. In his senior year, he received the Houston Chamber of Commerce Military Citation.

Mechanical Engineering: **Charles P. Howard** is a graduate assistant in the Department of Mechanical Engineering. During his undergraduate days, he was a Distinguished Student, president of the student branch of the American Society of Mechanical Engineers, and a member of the Scholarship Honor Society and the Student Engineers Council. Last year he presented a first place paper at the Fifth Air Conditioning Conference. Scholastically, he stood in the upper one per cent of his graduating class.

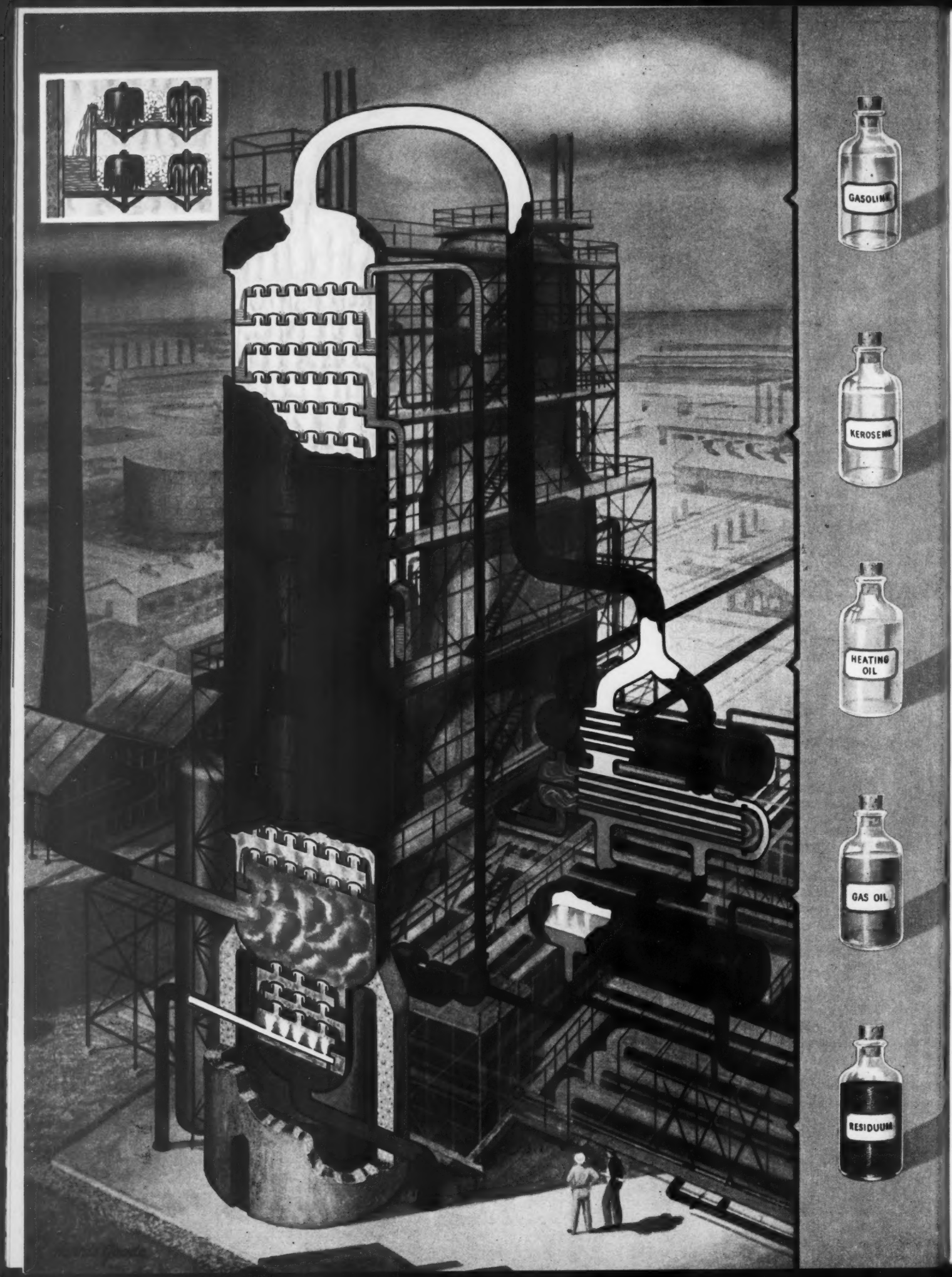
Louisiana State University

Geology: **Fred Lee Stricklin, Jr.,** 25, of Monroe, Louisiana, received his Master's degree from L.S.U. last June. His project is to trace the Pleistocene terraces of the Brazos River North of Waco—eventually meeting a student from another school who is tracing the Red River terrace in the same manner. At their rendezvous in Texas the two hope to determine whether the Louisiana and Texas terraces have a common origin. Their research may help establish the age of Indian bone deposits believed by many to be the oldest yet unearthed in North America.

Petroleum Engineering: **Marion L. Kimmel,** 27, of Flint, Michigan, is a transfer student from Kansas State College, where he received his Bachelor of Science degree this spring. Like a number of other holders of Humble fellowships, he is married and has two children. His research project is "A study of gravitational segregation in oil reservoirs."

Fred Lee Stricklin

Marion L. Kimmel


GASOLINE
KEROSENE
HEATING OIL
GAS OIL
RESIDUUM

Inside a Pipe Still

Modern Pipe Stills do an Efficient Distillation Job in Refining of Today's High Quality Gasolines, Lubricants

DISTILLATION, for many years the only form of refinery processing, consists simply of boiling crude oil. The hot vapors are cooled and condensed into liquids, which are drawn off and sent to storage to await further processing into fuels and lubricants. A number of product streams can be obtained from a single distillation operation, because different components of crude oil boil at different temperatures.

Today, the principle of distillation remains virtually unchanged from the days when kerosene was the main product. But methods and equipment have been drastically improved. Old-style *shell stills* (little more than pots in which oil is heated) are giving way to the modern *pipe still*, which is much more efficient. Pipe stills are so named because the oil is heated in pipes which run through a furnace.

Pipe still operations make it possible for the refiner to go "deeper" into the crude and make more of the valuable products with less waste. Through better use and control of heat, the oil is less likely to "crack" and break down into unwanted materials. There is much less heat loss than there is in shell stills, and heat is an important and expensive item in refinery operations.

The relatively small and compact pipe stills save valuable space within refinery grounds. Shell stills, on the other hand, may consist of as many as a dozen or more continuous "heating pots" and related equipment covering a large area. This compactness and the use of modern automatic controls make for better operating conditions, requiring less effort from the men in charge.

In short, a pipe still does a better job of distilling crude oil in a shorter time and with less equipment in a smaller area than older and less efficient types of distillation equipment.

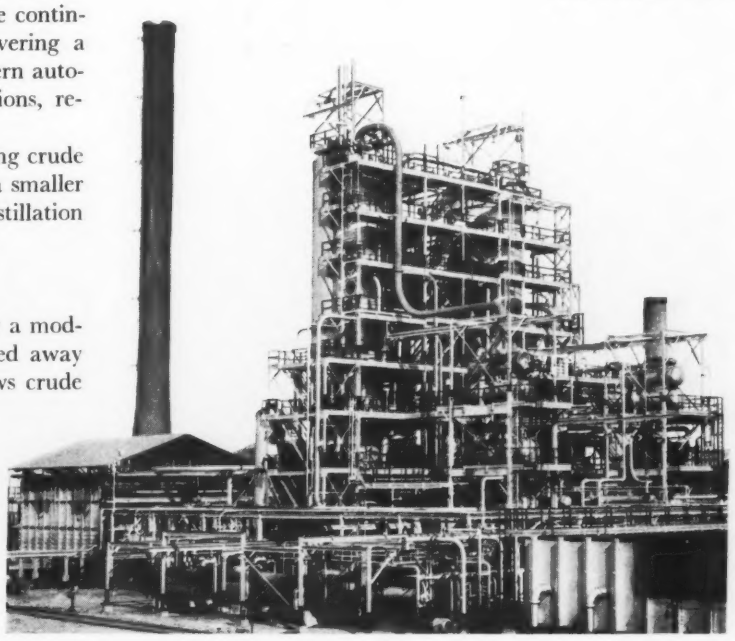
How it works

To give readers a quick-glance idea of the way a modern pipe still works, artist Harris Goode has sliced away part of the wall of a fractionator tower. He shows crude oil heated in great furnaces and piped to the bottom of the tower. Heated vapors rise up through the tower and pass through *bubble caps* on a number of plates or *trays* spaced inside the tower. As the vapors rise, they lose some heat and are further cooled by liquid introduced into the tower.

All up and down the tower, vapor components condense on the trays and are drawn off as product streams. Quite naturally, vapors of the lighter oils, such as the naphthas to be used in gasoline, rise highest in the tower. From here, vapors drawn off the top are run down to a series of "heat exchangers" through which cool water circulates to condense the vapor into a liquid.

The farther down the tower a stream is drawn off, the heavier it becomes—kerosene, heating oil, gas-oil to be cracked into gasoline, still heavier cuts to be used in lubricating oil manufacture, and finally the thick, black *residuum*. Even residuum is used in refinery operations, where it is made into asphalt for roads and used as "feed stock" in the refining of important products.

Artist Goode chose as the subject of his sketch Pipe Still No. 4, which has been in operation only a year or so. Next to No. 4, ground is being broken for Pipe Still No. 5, which will take its place among Baytown Refinery modern distillation units sometime in 1951.



Pipe Still No. 4, as it actually appears, is a maze of piping and steelwork. Close inspection reveals most parts sketched in artist's drawing.

With the winking lights of Clifton-by-the-Sea growing smaller as they fall farther astern, a drilling crew takes off into Galveston Bay, bound for duty on the night tour. The way to work is made safe by lights on oil wells and channel markers.

HARBOR LIGHTS

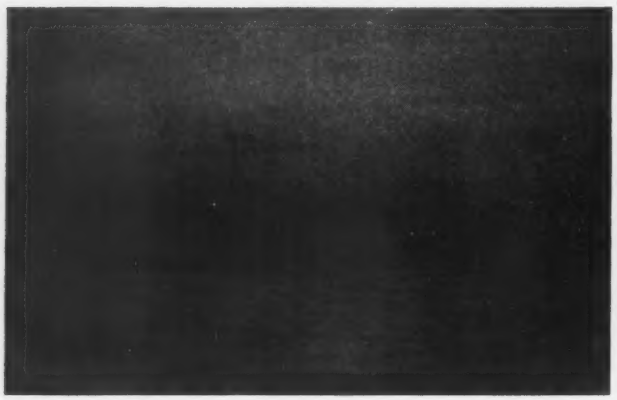
Lights of all Kinds Play an Important Part in Night Oil Operations in Galveston Bay

WHEN night closes in on Galveston Bay oil operations, numerous lights flickering here and there on the water paint a strange and impressive picture.

To Humble employees who hunt for oil and maintain production in the shallow waters of Redfish Reef in Galveston Bay, these lights mean many things. Each has its mission: some guide, some warn, some mark, and some make working at night possible.

Brilliant red lights pierce the darkness to warn all craft of the presence of a producing oil well. Small "windmills," mounted on poles above the well platforms, churn the air and transmit life to the storage batteries that power these six-volt signal lights.

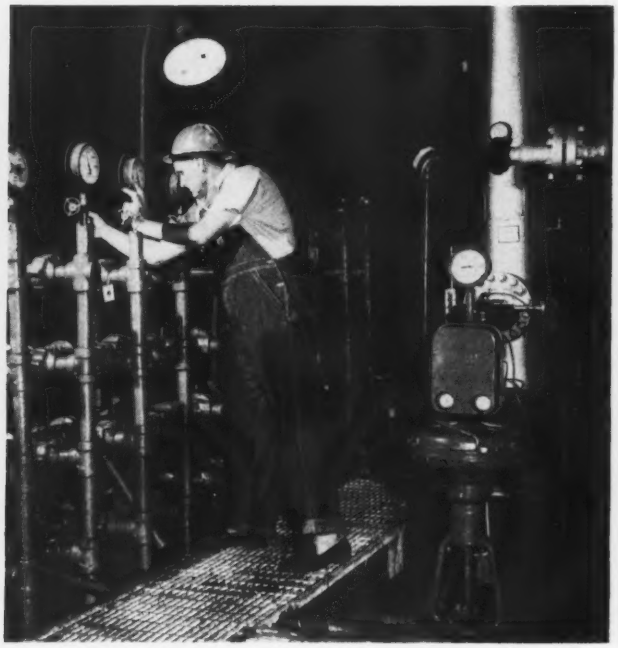
Flashing lights on channel markers guide captains of ocean-going vessels within the safety of the deep channel.



Small "windmill," mounted on pole above the platform of this producing well, generates enough electricity for warning light.

Lights on channel markers pierce the gloom of night, and keep ocean-going vessels within safety limits of the deep channel.

Peering into the night, skipper and passenger keep a sharp lookout to avoid trouble. Anchor light glows from top of cab.

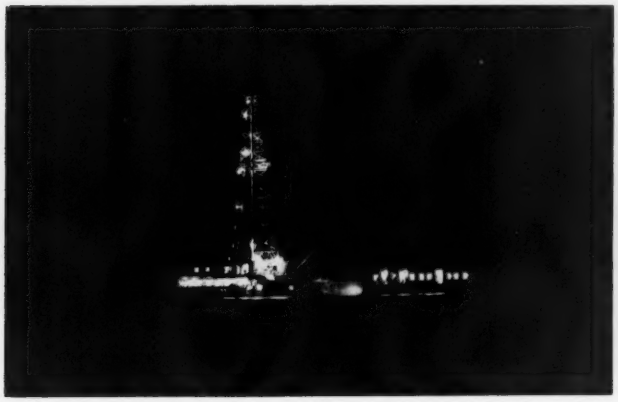


Under bright lights mounted on a separator island, a member of the night tour takes routine checks on pressure gauges.

The speedy craft that carry Humble crews to and from work have their own special lights. The port (left) side light is red, but instead of having a white starboard light as the channel markers have, they have a green light. The small anchor light on top of the cabin is white.

Steady, powerful lights on the "separator island" and on the barge rigs enable crews to work around the clock. These installations are lighted as bright as day and the drillers, roughnecks, and pumpers can work with the same safety as day crews.

Lights on drilling rigs, wells, and channel markers insure the safety of men and vessels, but perhaps the most welcome lights to men who continue Humble operations at night are the shore lights which guide their crewboat homeward at the end of an eight-hour night tour.



Blazing with lights, drilling rig at night in Galveston Bay is as garish a spectacle as the ferris wheel at a county fair.

Most welcome lights of all are those that guide the crewboat home at the end of an eight-hour tour in Galveston Bay.

R. V. Hanrahan Retires

Humble Pipe Line Company President since 1925 closes Productive 50-year career

When Ralph V. Hanrahan retired on October 10, he had completed nearly 50 years of service in the pipe line business, the last 25 as President of Humble Pipe Line Company.

A man whose only hobby was hard work, Mr. Hanrahan has been called the "dean of pipeline executives." His working life and the growth of Humble Pipe Line Company are parallel; indeed, it may be said that the story of Ralph Hanrahan is the story of Humble Pipe Line Company. Under his leadership, Humble pipe lines have grown from a few miles of small diameter pipe to a 9,000-mile system that delivers more crude oil than any other system in the world.

Mr. Hanrahan was born in Olean, Catteraugus County, New York, in 1885. In 1901, at the age of 16, he began his pipelining career, going to work in an ordinary field connection gang with the Indiana Pipe Line Company.

What Mr. Hanrahan considers his first big assignment came in 1904, when he was made paymaster for a line being laid by the Ohio Oil Company between Illinois and New Jersey. Though the young paymaster handled his duties with distinction, he longed to return to field work, and accepted a field connection job in 1906 at Riley, Indiana. Soon thereafter, he was transferred to a field in Casey, Illinois, as connection foreman.

Other field assignments came in succession, adding to the young pipeliner's fund of experience, until at length he found himself at the end of a completed pipe line in Pennsylvania. Here he was placed on operations work and groomed for a chief engineer's job. The call of field work was still too strong, however, and Mr. Hanrahan accepted a job with Standard Oil Company of Louisiana in 1909, laying a line between the Oklahoma border and Baton Rouge.

Ten years later came the circumstances which brought Mr. Hanrahan to Humble. In 1919, Mr. James Anderson, a friend of long standing, invited him to come down and begin building the system that was to become Humble Pipe Line Company. Mr. Hanrahan took the job of general superintendent on March 8, 1919.

One of Mr. Hanrahan's last official acts was to start flow of oil through Company's new 18-inch line from West Texas to Satsuma, north of Houston.

There was much to do when he took over. Humble had 8 or 10 miles of pipe line at Goose Creek and 20 to 25 miles at Burkburnett and Iowa Park, mostly 4-inch and under. Mr. Hanrahan's first job was the construction of about 40 miles of 8-inch line between West Columbia and Webster. This was followed by about 300 miles of 8-inch line with six pump stations between Comyn and Webster.

In 1920, Mr. Hanrahan was named to Humble Pipe Line Company's Board of Directors. Just a year later, he was promoted to Vice President and General Manager. He became President in 1925, and held that office until he retired on October 10, 1950.

In September, 1950, Humble pipe lines that were built and expanded under the direction of Ralph Hanrahan were delivering 735,000 barrels of oil a day. This 30-years' growth from a system that was delivering only 35,000 barrels a day in 1920 is a tribute to the guidance, vision, and boundless energy of Ralph V. Hanrahan. He is known, honored, and respected wherever pipeliners gather, as befits one who has done so much for the pipe line business.

THEY HAVE RETIRED

THIRTY long time employees of the Humble Companies have retired since the last issue of THE HUMBLE WAY. All but two of these employees have been with Humble for more than 20 years.

Humble Pipe Line Company: EDWARD F. BAKER, distribution clerk in the Houston Office, on September 10 after more than 30 years' service . . . THEODORE H. KRENEK, oiler at Hearne, on October 12 after more than 21 years' service.

Production Department: JERRY M. DUNMAN, watchman at Galveston Bay, on September 1 after more than 22 years' service . . . GEORGE C. FARQUHAR, porter at Hobbs, on September 14 after more than 16 years' service . . . JAMES W. FOWLER, roustabout at Tomball, on September 6 after more than 21 years' service . . . JOHN E. GLASSIE, district gauger at Alice, on September 1 after more than 25 years' service . . . H. T. HEAD, SR., roustabout gang pusher at Vernon, on October 1 after more than 31 years' service, . . . PAUL J. HEMPERLEY, carpenter at East Texas Division Gas Plant, on September 10 after more than 23 years' service . . . ADOLPH R. HOFFMAN, machine shop foreman at London, on September 1 after more than 21 years' service . . . JAMES R. REID, roustabout gang pusher at Hardin, on September 6 after more than 28 years' service . . . JOHN STEELE, compressor plant operator and gauger at Goose Creek, on September 26 after more than 28 years' service.

Baytown Refinery: ROBERT M. BLYSTONE, pipe fitter first class, on October 6 after 24 years' service . . . CLEVE CARLTON, pump repairman, on September 2 after more than 24 years' service . . . JOHN T. COOPER, guard, on August 23 after more than 23 years' service . . . WILLIAM H. CRAIGHEAD, stillman, on September 1 after more than 31 years' service . . . WILLIAM R. MCLEES, clerk, on September 1 after more than 21 years' service . . . MARCOS MARTINEZ, laborer, on October 4 after more than 26 years' service . . . HERMAN L. MITCHELL, storehouse clerk, on August 16 after more than 22 years' service . . . JOHN W. MOLAR, dragline operator, on September 22 after almost 31 years' service . . . ELMICK J. PARKS, SR., gang pusher, on September 20 after more than 32 years' service . . . RUCKA RUDOLPH, insulator first class, on September 1 after more than 30 years' service . . . CELSO SALAZAR, laborer, on September 11 after more than 22 years' service . . . JOHN E. SMITH, handy repairman, on September 22 after 29 years' service . . . FRANCIS E. WALDROP, insulator first class, on October 31 after more than 24 years' service . . . MILES WORTHY, reclamation inspector, on September 29 after more than 27 years' service.

San Antonio Refinery: SAMUEL O. BALLINGER, machinist, on October 7 after almost 26 years' service . . . JAMES A. BEMIS, stillman, on October 7 after more than 31 years' service.

Sales Department: PERCY R. REESE, utility man—general, on October 1 after more than 18 years' service.

Houston Office: HARRY M. LINGLE, assistant purchasing agent, on September 1 after more than 32 years' service . . . VAN P. WINDER, manager Land Records and Rentals Division, on October 30 after more than 31 years' service.

EMPLOYEES RECENTLY CALLED TO MILITARY SERVICE

ARMY

Anthes, Norman H.	Kilgore Gasoline Plant
Bruce, A. D., Jr.	Sales Adv. & Pub., Houston
Klecka, James Mark G.	Civil Engineering, Houston
McKinnon, Charles R.	Gulf Coast Division Office
Nieto, Jose C.	Baytown Refinery
Reese, Edgar Guy	London District Pipe Line

AIR FORCE

Ault, Wesley M., Jr.	Stationery-Printing, Houston
Cannon, James Allen	Baytown Refinery
Goodwin, Charles M.	Stationery-Printing, Houston
Keith, Harold Loyd	Baytown Refinery
Massey, James M.	Terrell Bulk Station
Miller, Taylor J.	Baytown Refinery
Newman, Cletus Roy	Manufacturing, Houston
Parke, Cheatham, Jr.	Colorado District, Production
Smith, Glennard Lyle	Refining Products Division, Houston
Stewart, Billy Joe	Crude Oil Accounting, Houston
Swinnea, Floyd V.	Baytown Refinery
Williams, Charley Lee	Baytown Refinery

NAVY

Adair, Kelly B., Jr.	Sales Accounting, Houston
Barclift, Robert H.	Gulf Coast Division Office
Batterton, William W., Jr.	Production Accounting, Houston
Broyles, Hulon G.	London Gas Plant
Chase, Herschell Ewing	Geophysical, Houston
Dyer, Alfred T.	Odessa District Pipe Line
Franks, Melvin T.	Odessa Production
Harrell, Alfred A.	Geol., Lease & Scouting, Houston
Johnson, Bobby E.	Clear Lake Gas Plant
Legler, Eugene David	Sales Adv. & Pub., Houston
Reagor, J. M.	Baytown Refinery
Rombs, Albert L.	Baytown Refinery
Samuel, Herman A.	Baytown Refinery
Williams, Lester E.	Baytown Refinery
Sorrells, Andrew C.	Baytown Refinery

MARINES

Anderson, Jack D.	Stratton District, Production
Bunger, Welton H., Jr.	Production Accounting, Houston
Felton, Harry Joe	Stationery-Printing, Houston
Felts, Thomas Jackson	Stationery-Printing, Houston
Hedgpeth, William B.	Northeast Texas Division Sales
Kempf, Glenn Eugene	East Texas Division Gas Plant
Killian, William R.	Bowie Bulk Station
Kiser, John O., Jr.	Crude Oil Accounting, Houston
Lovett, Albert P., Jr.	Production Accounting, Houston
Range, James N.	Hobbs District
Sampson, Leonce L.	Stationery-Printing, Houston
Smith, Hollis W.	Bowie Bulk Station
Zamora, Tito M.	Baytown Refinery

By the way . . .

O. Q. Lomax Elected President of Humble Pipe Line Company

O. Q. Lomax

A. E. Pecore

The election of O. Q. Lomax as President and A. E. Pecore as Vice President of Humble Pipe Line Company was announced on October 10.

Mr. Lomax began his career in 1917 as an engineer-draftsman with Empire Gas and Fuel Company in Oklahoma. In 1918 he joined Humble Oil & Refining Company and was engaged in making preliminary plans for the construction of the Baytown Refinery. He transferred to Humble Pipe Line Company early in 1919 and after brief jobs with other companies returned to Humble Pipe Line Company in 1924, serving in various engineering capacities until 1937, when he was appointed Assistant General Superintendent. Mr. Lomax was elected to the Company's Board of Directors and made Vice President and General Superintendent in 1942, and has served in such capacities since that time.

Mr. Pecore entered the service of Humble Pipe Line Company in 1919 and served in several engineering capacities until 1945, when he was named Chief Engineer. In 1949 he was made General Superintendent of the Company.

Deaths

SINCE the last issue of THE HUMBLE WAY, six active employees and three annuitants have died.

Active employees who have died are JAMES R. ALSBROOKS, 48, lease pumper-gauger at London, on September 4; WILLIAM C. MILLICAN, 43, coordination technician at Baytown Refinery, on August 17; SAMUEL NOLAN, 56, farm boss at Hobbs, on August 20; MRS. SHIRLEY H. ROBINSON, 23, comptometer operator in the Houston office, on September 9; CHARLES E. TAYLOR, 36, roustabout at Hobbs, on September 14; KENNETH O. WALLACE, 46, tester first class at Baytown Refinery, on August 24.

Annuitants: ED FEASTER, 73, tank foreman before his retirement, died on August 18; GEORGE F. MARTIN, 55, chief engineer at Comyn Station Humble Pipe Line Company before his retirement, on September 19; NUMA V. TRULY, 73, Humble Pipe Line Company comptroller in the Houston Office before his retirement, on August 30.

THE HUMBLE WAY

VOL. VI NO. 3
SEPTEMBER-OCTOBER
1950

Oil for Security 1
An interview with Hines H. Baker
Keys to Caution 4
Why That Name? 6
They Live on the Lake 8
Gonzales, Birthplace of Texas History 11
Historic sketches by E. M. Schiwetz
Gonzales Today 14
Humble Fellowships 15
Inside a Pipe Still 19
Harbor Lights 20
R. V. Hanrahan Retires 22
They Have Retired 23
By the way 24

Published every other month for employees and stockholders

HUMBLE OIL & REFINING COMPANY

P. O. BOX 2180, HOUSTON 1, TEXAS

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Waiting for the oil; crewmen on Rig 18 in Galveston Bay watch the water, which cushions the rise of oil in a new well, spray from the Christmas tree.

The best medicine in the world!

Don't get me wrong. I think the new "wonder drugs" are fine. In fact, they just helped pull me through a bad time. But a sick man needs *more* than medicine; he needs *peace of mind*. And, for peace of mind, you can't beat those Humble "sick checks." Mine just came today, and I *know*.

I'll be back at work in another few weeks. Until then, Company checks will keep on paying my bills and meeting my household expenses, just like I was on the job.* It's a mighty comforting feeling. For a sick man, it's the best medicine in the world.

*Sickness Benefits:

After one year's service — 4 weeks at full pay; 2 weeks at half pay.
After five years' service — 8 weeks at full pay; 18 weeks at half pay.
After 10 years' service — 12 weeks at full pay; 40 weeks at half pay.

HUMBLE OIL & REFINING COMPANY